REEL   # 13
KHADZHAYEV, R.R

UNCLASSIFIED   PROCESSING DATE--13NOV70

TITLE--FAMILIAL FORMS OF SCOLIOSIS -U-

AUTHOR-(04)-ABALMASOVA, YE.A., KOGAN, A.V., NIKITINA, M.P., KHADZHAYEV, R.R.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 4, PP 22-26

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCULOSKELETAL DISEASE, HEREDITARY DISEASE, HUMAN GENETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1362   STEP NO--UR/9115/70/000/004/0022/0026

CIRC ACCESSION NO--AP0109443
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0109443

ABSTRACT/EXTRACT-- (U) GP-0- ABSTRACT. THIS ANALYSIS INCLUDES 132 FAMILIES, IN 94 FAMILIES (200 SUBJECTS) SCOLIOSIS WAS OBSERVED IN 2 AND MORE PERSONS, IN 39 FAMILIES THE RELATIVES OF SCOLIOTIC PATIENTS SUFFERED FROM ENURESIS, 35 SCOILOTIC PATIENTS ALSO HAD ENURESIS. ALL PATIENTS WITH SCOLIOSIS WERE DIVIDED INTO 3 GROUPS: SCOLIOSIS IN HOMO AND HETEROZYGOUS TWINS, SCOLIOSIS IN PARENTS AND CHILDREN, SCOLIOSIS IN TWO CHILDREN FROM ONE FAMILY. OF 8 PAIRS OF TWINS, 7 PAIRS WERE HOMOZYGOUS. AMONG 8 PAIRS, THERE WERE 6 PAIRS OF SISTERS, BROTHER AND SISTER IN ONE PAIR, AND BROTHERS IN ANOTHER. SCOLIOSIS IN TWINS WAS ALWAYS CONCORDANT, BUT IN ONE OF THEM ALWAYS MORE SEVERE THAN IN THE OTHER. BY THE CHARACTER AND SEVERITY, SCOLIOSIS IN THE DAUGHTER WAS IDENTICAL TO THAT OF THE MOTHER, WHILE IN THE SON IT WAS ALWAYS LESS MARKED. SCOLIOSIS IN THE SON BY THE CHARACTER AND SEVERITY WAS IDENTICAL TO THAT OF THE FATHER, WHILE IN THE DAUGHTER IT WAS ALWAYS MORE SEVERE. SCOLIOSIS OF VARIOUS SEVERITY WAS A RULE IN THE GROUP WHERE IT WAS PRESENT IN TWO CHILDREN OF THE SAME FAMILY. AMONG ALL SCOLIOSIS, THE SCOLIOSES IN PARENTS AND CHILDREN CONSTITUTED THE LARGEST GROUP AND, MOREOVER, THE INCIDENCE OF SCOLIOSIS IN THE MOTHER AND CHILDREN WAS 3 TIMES HIGHER THAN IN THE FATHER AND CHILDREN. IN ALL GROUPS SCOLIOSIS WAS MORE FREQUENTLY OBSERVED IN THE FEMALES, BUT IN THE GROUP WITH SCOLIOSIS IN THE MOTHER AND CHILDREN, THE PREVALENCE OF FEMALES WAS ESPECIALLY MARKED. THE AUTHORS BELIEVE MYELODYSPLASIA AND THE DYSRAPHIC STATUS TO BE THE MOST FREQUENT CAUSE OF SCOLIOSIS DEVELOPMENT. FACILITY: TSENTRAL'NOGO INSTITUTA TRAVMATOLOGII I ORTOPEDII.

UNCLASSIFIED

UDC: 621.396

USSR

KHADZHI, B. A.

"Measurement of the Time of Arrival of a Sinusoidal Radio Signal Which is Received in the Presence of Noise and Pulse Interference"

Moscow, Radiotekhnika, Vol 26, No 9, Sep 71, pp 31-35

Abstract: The author considers a radio signal in which the fronts of the envelope have a predetermined (exponential) shape. It is assumed that the systematic measurement error due to the finite rise time of the envelope front is known, and only the random errors due to interference are considered. In the most important practical case of relatively low noise, most of the results are derived in analytical form. It is assumed that the input voltage $x(t)$ is the sum of signal $s(t)$ and interference $n(t)$:

$$x(t) = s(t) + n(t) = A a(t-\tau) \sin(\omega_0 t + \varphi) + n(t),$$

where A, φ and τ are the random amplitude, phase of the carrier and time of arrival of the signal respectively; $a(t)$ is the envelope, which takes the form

$$a(t) = \begin{cases} 1 - e^{-t/T_\phi} & \text{when } 0 < t \leqslant T, \\ e^{-t/T_\phi}(e^{T/T_\phi} - 1) & \text{when } t > T. \end{cases}$$

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USSR

KHADZHI, B. A., <u>Radiotekhnika</u>, Vol 26, No 9, Sep 71, pp 31-35

It is assumed that the carrier frequency ω_0, signal duration T and duration T_ϕ of the envelope front are known. A model is considered where the interference pulses are short (compared with T_ϕ) segments of white noise with spectral density M_0. It is shown in particular that when the spectral density of the noise on the carrier frequency N_0 is much less than the spectral density of the white noise, the variance of the estimate of τ is

$$\overline{(\Delta\tau)^2} = \frac{N_0 T_\phi}{A^2}\,(1+\delta),$$

where $\delta \ll 1$ is the relative time taken up by the interference pulses. Suboptimum measurement of the time of arrival of a radio signal in the absence of pulse interference is considered. It is found that when pulse interference is present,

$$N_0 + \delta M_0 = N_0\left(1 + \delta\frac{M_0}{N_0}\right).$$

Thus in the suboptimum method of measuring the time of arrival of the signal, the effect of pulse interference is M_0/N_0 times as great as in the optimum method of measurement. One figure, one table, bibliography of four titles.

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1/2   023   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--MEASURING THE PHASE OF SUPERLONG WAVE SIGNALS DURING THE SOLAR
   ECLIPSE OF 22 SEPTEMBER 1968, MEASUREMENT OF PHASE OF SUPERLONG WAVE
AUTHOR-(02)-PROTOPOPOV, L.A., KHADZHI, V.A.

COUNTRY OF INFO--USSR

SOURCE--INSTITUTE OF RADIO ENGINEERING AND ELECTRONICS ACADEMY OF SCIENCES
   USSR; MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 2, 1970, PP 363-364
DATE PUBLISHED-------70

SUBJECT AREAS--NAVIGATION, ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--SOLAR ECLIPSE, SIGNAL FREQUENCY, PHASE ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1668   STEP NO--UR/0203/70/010/002/0363/0364

CIRC ACCESSION NO--AP0109659
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0109659
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON 22 SEPTEMBER 1968 THE AUTHORS
MEASURED THE PHASES OF SIGNALS OF THE SUPERLONG WAVE RADIO STATIONS GBR
(16 KC-SEC) AND RYES (100 KC-SEC) FOR A PERIOD OF SIX HOURS COVERING THE
VISUAL DURATION OF THE SOLAR ECLIPSE. THE MEASUREMENTS WERE MADE FROM
1030 TO 1700 HOURS ON 22 SEPTEMBER AND FROM 0830 TO 1700 HOURS ON 26
SEPTEMBER. THE CURVE FOR 22 SEPTEMBER AND FROM THE END OF THE NIGHT TO
DAY TRANSITION. THE SOLAR ECLIPSE EFFECT WAS MANIFESTED DURING THE
PERIOD 1300-1600 HOURS AND CONSISTED OF AN INCREASE IN PHASE. THE
MAXIMUM PHASE DRIFT WAS PLUS50PLUS1DEGREES BY 1430 HOURS ON 22
SEPTEMBER. THE MAXIMUM RELATIVE CHANGE IN THE FREQUENCY OF THE SIGNAL
RECEIVED FROM GBR CAUSED BY THE SOLAR ECLIPSE WAS 2 TIMES 10 NEGATIVE 9
IN ABSOLUTE VALUE. THIS SAME ORDER OF MAGNITUDE OF FREQUENCY CHANGE WAS
CAUSED BY TRANSITION FROM DAY TO NIGHT. IN THE SIGNAL PHASE FOR
STATION RYES THERE IS SOME INCREASE IN IRREGULAR PHASE VARIATIONS DURING
THE TIME OF THE SOLAR ECLIPSE. THERE WERE NO SIGNIFICANT REGULAR
DEVIATIONS FROM THE NORMAL PHASE VARIATION FOR REYS ON 26 SEPTEMBER.
THIS CAN EVIDENTLY BE ATTRIBUTED TO THE FACT OF A CONSIDERABLY LESSER
EXTENT OF THE PROPAGATION PATH FOR THIS SIGNAL THAN FOR GBR SIGNAL AND A
DIFFERENT ORIENTATION OF THIS PATH RELATIVE TO THE EAST WEST LINE.

UNCLASSIFIED

USSR   UDC $\left[537.226 + 537.311.33\right]$: $\left[537 + 535\right]$

KOLODIYEVA, S. V., FOTCHENKOV, A. A., KHADZHI, V. Ye.

"Anomalous Dielectrical Dispersion in Synthetic Quartz Monocrystals"

Khar'kov, V sb. Monokristally i tekhnika (Monocrystals and Engineering -- collection of works) No 4, 1971, pp 149-155 (from RZh-Fizika No 11, 1971, Abstract No 11E881)

Translation: It is shown experimentally that the relaxation processes in monocrystals of synthetic quartz cannot be considered as purely Debye processes. The observable anomalies of the dielectric dispersion are considered from the position of the interaction of the electrically active impurity defects of the Al/R type of P centers (R-Li, Na, K) with the electrically inactive complexes of the nonstructured phase, the extent of which is determined in the crystal by its growth conditions.

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KHADZHIMATOVA, G.M.   Magnetics

BIBLIOGRAPHIC DATA SHEET

1. Report No. JPRS 59624

MEASUREMENT OF DEMAGNETIZING FIELDS IN CYLINDRICAL MAGNETIC FILMS

5. Report Date 26 July 1973

Author: G.M. Khadzhimatova

Joint Publications Research Service
1000 North Globe Road
Arlington, Virginia 22201

Sponsoring Organization Name and Address: As above

SBORNIK NAUCHNYKH TRUDOV PO PROBLEMAM MIKROELEKTRONIKI, MOSKOVSKIY INSTITUT ELEKTRONNOY TEKHNIKI, No. 9, 1972, Moscow

The report contains a description of a method for the measurement of demagnetizing fields in cylindrical magnetic films.

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Components
Thin Film
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USSR

UDC: 537.534.8

ARIFOV, U. A., KHADZHIMUKHAMEDOV, Kh. Kh., YUNUSOV, A. I., Institute of
Electronics, Academy of Sciences of the Uzbek SSR, Tashkent "Order of the
Red Banner of Labor" State University imeni V. I. Lenin

"Channeling of Light Ions in Tungsten, Molybdenum,and Copper Single Crys-
tals"

Abstract: The paper presents the results of an investigation of the scat-
tering factor of ions as a function of type, ion energy,and diameter; the
mass of the target atoms and crystal lattice parameters in the case of
the friable face (112) of single crystals of tungsten, molybdenum, copper,
and silicon. Currents were measured by the method of double modulation
at 300°K. Lithium, sodium, potassium, rubidium,and cesium atoms were
studied. The values found for the ratio of the greatest diameter of the
channeled ion to the width of the channel of the crystal face were found
to be 0.77 for sodium bombardment of copper, 0.78 for lithium bombardment
of tungsten,and 0.79 for lithium bombardment of molybdenum. The corre-

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USSR

ARIFOV, U. A. et al., IAN UzSSR, Ser. Fiz.-Mat. Nauk, No 3, 1971, pp 60-63

sponding figure for lithium cations and copper is 0.53, which means that
the scattering factor for copper is somewhat lower than for silicon in
spite of the larger mass of copper atoms. An anomaly in the curve for
the scattering factor as a function of the ion mass is observed which
depends on the geometry of the crystal lattice of the target. Scattering
of heavy ions by light targets is attributed to multiple collisions between
the ion and the surface atoms. A complete interpretation of the results
would require calculations which account for the increasing transparence
of the crystal face as the energy increases. In particular, single col-
lisions predominate at energies greater than 1 keV, while multiple paired
collisions are the rule at lower energies. Three figures, bibliography
of nine titles.

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USSR

ARIFOV, U. A., KHADZHIMUKHAME_ ~', Kh. Kh., YUNUSOV, A. I., Institute of
Electronics, Academy of Sciences of the Uzbek SSR, Tashkent "Order of the
Red Banner of Labor" State University imeni V. I. Lenin

"Scattering of Alkali Ions by the Surface of NbTi and SiC Targets"

Abstract: The authors investigate scattering of alkali ions by the surface
of NbTi alloy, the binary compound α-SiC, and their components in the
bombardment ion energy region $E_0 = 12\text{-}30$ keV. The experiments were done
in a working vacuum of $(1\text{-}5) \cdot 10^{-7}$ mm Hg. The targets were hardened either
by electron bombardment from the back side or by heating the substrate.
The ion beam currents were of the order of a microampere. Measurements
were taken by the oscillographic method and by the galvanometric method
(for small secondary currents). The coefficient of ion scattering by
face (0001) of α-SiC was studied as a function of the type and energy of

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USSR

ARIFOV, U. A. et al., IAN UzSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 4, 1971, pp 55-57

the primary ions. Scattering by the components of the alloy was found to be lower than for the alloy itself. In the case of NbTi, scattering by niobium alone gave a higher coefficient, and titanium alone gave a lower coefficient of scattering than the alloy. Analysis of the results shows that the value of the scattering coefficient decreases with a reduction in the mass of the atoms in the target and an increase in the mass of the bombarding ions. The experimental data are approximated by the empirical formula

$$K_p = \gamma m_1 \left(\frac{m_2}{L_0}\right)^n,$$

where K_p is the scattering factor, γ is an empirical constant, m_1 is the mass of the atoms in the target, m_2 is the mass of the bombarding ions, and the exponent n is a function of the atomic number of the ion. Three figures, bibliography of five titles.

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USSR

MIKHAYLOV, F. A., TYKHEVICH, O. F., and KHADZHIINOV, M. K.

"Calculation of the Characteristics of Different Structural Combinations of Linear Transitional Systems"

Abstract: As is known, the transfer function of a linear transitional system is the natural expansion of the concept of the transfer function of a steady system, but in contrast to a steady system a transitional system generally cannot be obtained with the aid of a finite number of operations on the coefficient of dynamics equations. Methods of finding transfer functions of different structural combinations (except parallel), done for steady systems, cannot be used for transitional system. This article was devoted to the problem of finding approximate analytical expressions of transfer functions for different combinations of linear transitional systems. It is assumed that the given and sought for transfer functions can be approximately expressed in the form:

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USSR

MIKHAYLOV, F. A., et al., Tr. Mosk. Aviats. In-ta, No 240, 1972, pp 116-122

$$W_1(s,t) = \frac{c_{1,0}(t)s^{q-1} + \ldots + c_{1q-1}(t)}{s^q + d_{1,1}(t)s^{q-1} + \ldots + d_{1q}(t)}$$

where i—index of chain or combination; c_{ij}, $j = 0\ldots$, $q-1$, d_{ij}, $j = 1,\ldots,$ q—real coefficients, s—complex variable. The problem is reduced to finding formulas which express the coefficients of transfer coefficients of combinations through the coefficients of transfer functions for chains. Since solution of this problem depends on the proposed degree of the polynomial of the transfer function denominator, then it is necessary to assign the indicated degree to obtain a single-value solution. The variant of solution is examined for the case when the polynomial degree of the transfer function denominator of a combination is determined via the polynomial degree of transfer function denominators of chains by the same rules which pertain to the theory of steady systems. 1 figure, 1 bibliographic reference.

2/2

USSR

SARYMSAKOV, T. A., Academician of the Academy of Sciences of the Uzbek SSR, KHADZHIYEV, Dzh., Tashkent State University imeni V. I. Lenin

"Topological Moduli Over Half-Fields of the First Kind"

Abstract: The work is a continuation of research done by Sarymsykov and others in the field of topological half-fields (M. Ya. Antonovskiy et al., "Topological Half-Fields", Tashkent, 1960; M. Ya. Antonovskiy et al., "Works of Tashkent State University, Mathematics," № 208, 1962; A. M. Dektyarev, Ibid). For the sake of simplicity, a Tikhonov half-field is taken as the basic half-field. Most of the results can be extended to the case of an arbitrary half-field of the first kind without changes.

Let X_q be the modulus over the half-field E_q and let $\prod\limits_q X_q \left(\sum\limits_q X_q\right)$ be the direct product (sum) of the moduli X_q for each $q \in \Lambda$. The sum $\sum\limits_q X_q$ and the product $\prod\limits_q X_q$ are converted to moduli over the half-field $E = \prod\limits_q E_q$ if

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USSR

SARYMSAKOV, T. A. et al., DAN SSSR, vol 200, No 5, Oct 71, pp 1041-1043

the operations of addition and multiplication by elements E are introduced

by coordinates. In the case where X_q are topological moduli, moduli $\prod_q X_q$

and $\sum_q X_q$ are considered with Tikhonov topology. Thirteen theorems are

given. Bibliography of five titles.

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UDC 577.4:616.988.26(571.13)+576.858

USSR

VOROB'YEVA, N. N., KHARITONOVA, N. N., and KHADZHIYEVA, T. M. Biological Institute, Siberian Branch of the Academy of Sciences USSR, Novosibirsk

"Ecological Relationships of the Virus of Omsk Hemorrhagic Fever with Animals in a Natural Focus"

Abstract: Circulation of hemorrhagic fever virus among various types of animals -- inhabitants of a natural focus -- the emergence of ecological links between virus and animals, and elucidation of a possible nontransmitting mechanism for transfer of the infection in the natural focus were the aim of this study. A total of 890 small mammals of 13 species from seven regions in the Novosibirsk area were examined. The blood of 705 small mammals of 13 species and the serum of 1199 domestic animals were tested in the hemagglutination inhibition test with antigen from regional strains of Omsk hemorrhagic fever virus. Brain, blood, urine, and internal organs of the animals were examined. The virus was isolated on chick embryo fibroblasts, with subsequent intracerebral infection of white mice.
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USSR

To elucidate the possibilities of a nontransmitting mechanism for transfer of the infection, 56 muskrats were infected with the virus in different ways. Sixteen virus strains were isolated from muskrat brains, which indicates that the disease is of viral etiology also in the Novosibirsk region. Serological evidence established the presence of specific antibodies against hemorrhagic fever virus in the blood of domestic animals and in 10 species of small mammals. Ecological relationships exist between the virus and both wild and domestic animals in natural foci. Tests involving infection of muskrats and water rats with different doses of the virus, administered by the alimentary and inhalation moates, showed that the muskrat is very sensitive to the virus, and that water rats have a low sensitivity. Muskrats may contaminate their environment with the virus by excretion.

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1/2   020   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--PYRROMECAINE ANESTHESIA DURING INSTRUMENTAL DIAGNOSTIC
   INVESTIGATIONS IN PATIENTS WITH PULMONARY PATHOLOGY -U-
AUTHOR-(05)-KUZIN, M.I., PRYANISHNIKOVA, N.T., OSIPOVA, N.A., KHADZHYEVA,
   S.N., GUZNOV, G.I.
COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 6, PP 58-62

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHETIC, DIAGNOSTIC METHODS, RESPIRATORY SYSTEM DISEASE,
   LUNG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605003/D09 STEP NO--UR/0531/70/000/006/0058/0062

CIRC ACCESSION NO--AP0139541
                   UNCLASSIFIED

CIRC ACCESSION NO--AP0139541
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   CLINICAL TRIALS OF PYRROMECAINE, A
NEW SOVIET MADE LOCAL ANESTHETIC, EFFECTED IN 102 PATIENTS WITH SURGICAL
PULMONARY PATHOLOGY DEMONSTRATED THIS PREPARATION CAPABLE OF PRODUCING
AN EFFECTIVE ANESTHESIA OF THE RESPIRATORY TRACT, ENSURING PERFORMANCE
OF COMPLICATED DIAGNOSTIC PROCEDURES (BRONCHOGRAPHY,
BRONCHOSPIROGRAPHY).   AS REGARDS ITS POTENCY AND QUICKNESS OF
ANESTHETIC ACTION PYRROMECAINE IS SUPERIOR TO NOVOCAINE AND IS EQUAL TO
DICAINE.   SIDE EFFECTS OF THE PREPARATION ARE INSIGNIFICANT.
FACILITY: KAFEDRA FAKUL'TETSKOY KHIRURGII I MII I. M. SECHENOVA,
INSTITUT FARMAKOLGII, MOSKVA.

UNCLASSIFIED

1/3 · 022   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--STATE OF PERIPHERAL BLOOD CIRCULATION IN PERSONS BEING FOR A LONG
   TIME IN AN OPEN TYPE SUBMARINE LABORATORY, HABITAT -U-
AUTHOR-(04)-AKHLAMOV, YE.A., GULYAR, S.O., GERASYUTENKO, YE.I., KHAES,
   O.A.
COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHNYY ZHURNAL, AKADEMIYA NAUK UKRAINS'KOI RSR, 1970, VOL
   16, NR 1, PP 115-120
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD CIRCULATION, PERIPHERAL CIRCULATION, AQUANAUT,
   UNDERWATER RESEARCH LABORATORY, ATMOSPHERIC HUMIDITY, ATMOSPHERIC
   TEMPERATURE/(U) IKHTIANOR UNDERWATER LABORATORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1369   STEP NO--UR/0238/70/016/001/0115/0120

CIRC ACCESSION NO--AP0136728
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0136728

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERIPHERAL BLOOD CIRCULATION OF
EIGHT AQUANAUTS WHO SPENT SEVEN DAYS IN AN OPEN TYPE SUBMARINE
LABORATORY WAS STUDIED TO DETERMINE THE ADAPTIVE STRESSES OF A PERSON
SUBJECTED FOR A PROLONGED TIME TO UNUSUAL CONDITIONS WITHOUT PREVENTIVE
PREPARATION FOR SUCH CONDITIONS. THESE AQUANAUTS PARTICIPATED IN
IKHTIANOR-67 BLACK SEA EXPEDITION IN AUGUST-SEPTEMBER, 1967. THE
LABORATORY, A SPECIALLY DESIGNED FOUR CHAMBER VESSEL HAVING VOLUME OF 28
M PRIME3 WITH FORCED VENTILATION, WAS SUBMERGED TO 14 M DEPTH. IT WAS
EQUIPPED FOR CONTINUOUS LIVING UNDER WATER. ATMOSPHERIC PRESSURE OF 2,2
ATM, TEMPERATURE OF 23 TO 31 C AND HUMIDITY OF 93PERCENT WERE
CONTINUOUSLY MAINTAINED. ONLY HEALTHY INDIVIDUALS, 24 TO 42 YEARS OLD
WERE SELECTED FOR INVESTIGATION. TWICE A DAY THEY WALKED FOR 30 MIN AT
A DEPTH OF OVER 14 M AND ONCE A DAY PERFORMED PHYSICAL WORK FOR 20 MIN.
WATER TEMPERATURE VARIED FROM 20 TO 23 C BUT AQUANAUTS WERE WARMLY
DRESSED. PERIPHERAL BLOOD CIRCULATION WAS MEASURED BEFORE SUBMERGING
AND ON THE SURFACE AFTER BEING UNDER WATER FOR ONE, TWO, THREE, FOUR,
AND FIVE DAYS. IN ADDITION TO BLOOD CIRCULATION AND PULSE, SKIN
TEMPERATURE IN THE MOUTH AND AT VARIOUS POINTS OF THE BODY AND LIMBS
WERE MEASURED. MEASURING TECHNIQUES AND INSTRUMENTATION ARE DESCRIBED
IN DETAIL AND DATA OBTAINED ARE PRESENTED IN TABULAR FORM.

UNCLASSIFIED

CIRC ACCESSION NO--AP0136728
ABSTRACT/EXTRACT--AS A RESULT OF THE DESCRIBED INVESTIGATION THE FOLLOWING
PRELIMINARY CONCLUSIONS WERE MADE: FROM AMONG MANY FACTORS AFFECTING A
HUMAN BEING SUBJECTED TO PROLONGED STAYING UNDERWATER MOST IMPORTANT FOR
BLOOD CIRCULATION ARE HIGH HUMIDITY AND AIR TEMPERATURE, AND CONTINUOUS
INHALING OF SUBTOXIC CONCENTRATIONS OF OXYGEN; AFTER BEING IN A
SUBMARINE LABORATORY FOR THREE TO FOUR DAYS, AN ADAPTATION OF THE
ORGANISM TAKES PLACE; WHEN PERFORMING UNDERWATER WORK IN A LIGHT
AQUANAUT SUIT MUCH ATTENTION SHOULD BE FAID TO PROTECTING THE AQUANAUT
FROM COLD; AND IN DESIGNING OPEN TYPE UNDERWATER BASE, MEANS SHOULD BE
PROVIDED FOR KEEPING AQUANAUTS WARM.   FACILITY: KAFEDRA KHVOROB
VUKHA, GORLA, NOSA DONETS'KOGO MEDYCHNOGO INSTYTUTU; MEDYCHNYY VIDDIL
VNDI GIRNYCHORYATUVAL'NOY SPRAVY.

USSR   UDC: 681.3

KHABIBULLIN, N. F., KHAFIZOV, F. I.

"Reliability of Data on Magnetic Tapes in the 'Minsk-22' Digital Computer"

Tr. N.-i. i proyektn. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo
(Works of the Scientific Research and Design Institute on Introducing
Computer Technology Into the National Economy), 1970, vyp. 5, pp 102-107
(from RZh-Matematika, No 11, Nov 71, Abstract No 11V767)

Translation: A mathematical model is proposed for determining the proba-
bility of undetected errors on magnetic tape in the "Minsk 22" computer
with simultaneous use of two check methods: modulo-2 check and the
method of check summation. The probability of error for a data block in
general form is equal to $P = lmkp_0p_1$, where l is the number of sweeps of
a portion of the data block through the tape transport channel during
solution of the problem; k is the number of combinations of possible
errors; p_1 is the probability of appearance of a 1, and p_0 is the proba-
bility of appearance of a 0. V. Mikheyev.

1/1

USSR

UDC 65:65.011.56

KHAFIZOV, F. I., Engineer

"A Method of Determining Errors on Magnetic Tape in the Minsk-22 Digital Computer"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 7, 1971, pp 44-45

Abstract: The Minsk-22 digital computer uses both built-in and programmed checking to detect errors in data stored on magnetic tape. The probability of the occurrence of undetected errors in k runs of a data file divided into m portions of n words each is given by the formula:

$$P_H \approx kmn(n+1)4 \cdot 10^8 p_1^3 p_0^2,$$

where p_1 and p_0 are the probabilities of the occurrence of a single incorrect "1" and a single incorrect "0," respectively. The values of p_1 and p_0 are different for different types of magnetic tape and may be determined specifically for each Minsk-22 by experimental and statistical means.

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USSR

UDC: 681.3

KHABIBULLIN, N. F., KHAFIZOV, F. I.

"Reliability of Magnetically Taped Data on the 'Minsk-22' Digital Computer"

Tr. N.-i. i proyektn. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo
(Works of the Scientific Research and Design Institute on Introducing Com-
puter Technology Into the National Economy), 1970, vyp. 5, pp 102-107
(from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V787)

Translation: A mathematical model is proposed for determining the proba-
bility of undetected errors on the magnetic tape in the "Minsk-22" digital
computer with simultaneous use of two checking methods: mod-2 check and
the addition check method. The probability of error for a data block, in
general form, is equal to $P = lmkp_0 p_1$, where l is the number of sweeps of
a portion of the block across the tape transport channel during solution of
the problem; k is the number of combinations of possible errors; p_1 is the
probability that a one will show up; p_0 is the probability that a zero will
appear. V. Mikheyev.

1/1

UDC: 681.3.06:51

USSR

KHAFIZOV, F. I.

"Comparison of Three Modifications of the Method of Check Summation of Data"

Tr. N.-i. i proyektn. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo (Works of the Scientific Research and Design Institute on Introducing Computer Technology Into the National Economy), 1970, vyp. 5, pp 108-116 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V579)

[No abstract]

1/1

USSR

UDC 537.226+537.311.33

KHAGENMYULLER, P.

"Fluroine -- Cornerstone of Mendeleyev's Periodic Table"

V sb. 100 let period. zakona khim. elementov. 1869-1969 (Centenary of Periodic Law of Chemical Elements, 1869-1969 -- Collection of Works), Moscow, "Nauka" (Science), 1971, pp 75-84 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1000)

Translation: Light is cast on fluorine's special role as the most electronega- tive of the elements in the periodic system. Detailed consideration is given to the crystalline structure of solid fluorine compounds falling under the types of tungsten bronzes, garnets, substituted oxides, and rutile, as well as structures like silicates and aluminosilicates, etc. Changes in the magnetic properties of crystals are investigated in connection with the determined struc- ture and composition (phases of variable composition, solid solutions). Bibliography with 16 titles.

1/1

PLEASE SEE KHAY...

FOR KHAI... NAMES,

UNCLASSIFIED   PROCESSING DATE--11SEP70

1/2   015
TITLE--DEFECTS IN SEMICONTINUOUSLY CAST PIPE -U-

AUTHOR--KRIVOSHEYEV, A.YE., OZIMIN, YU.S., KHAKHALIN, B.D., DAVYDOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, (1) 7-9

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--METAL CRACKING, METAL CASTING, CONTINUOUS CASTING, METAL PIPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1319   STEP NO--UR/0128/70/000/001/0007/0009

CIRC ACCESSION NO--AP0106096
                    UNCLASSIFIED

2/2   015
CIRC ACCESSION NO--AP0106096
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH THE PURPOSE TO ELUCIDATE THE
CRACK FORMATION IN TITLE CASTING THE STUDY WAS CARRIED OUT ON THE TEMP.
FIELD ACROSS THE SECTION OF THE TITLE PIPE DURING ITS SOLIDIFICATION.
THE TEMP. OF CAST IRON (C 3.5-3.7, SI 2.0-2.3, MN 0.6-0.8, P 0.2-0.3,
AND S SMALLER THAN OR EQUAL TO 0.1 WT. PERCENT) BEFORE CASTING WAS
1280-1300DEGREES, AND THE WITHDRAWAL RATE WAS 1.0-1.1 AND 0.7-0.8 M-MIN.
DIAM. OF PIPES WAS 500 AND 700 MM. THREE ZONES OF SOLIDIFICATION WERE
DISTINGUISHED: (1) PERIOD OF EXPANSION PRIOR TO SHRINKAGE, (PES), (ZONE
OF TIGHT CONTACT OF THE CASTING ALONG 40PERCENT OF MOLD HEIGHT), (2)
PERIOD OF FOUNDING PREPEARLITE SHRINKAGE (ZONE OF THE GAP BETWEEN THE
CASTING AND MOLD (PFPS), AND (3) FINISHING PERIOD OF FULL SHRINKAGE,
(FPCS) (ZONE OF COOLING OUTSIDE OF THE MOLD). EXPERIENCE AT FOUNDRIES
HAS SHOWN THAT CAST IRONS WITH HIGH VALUES FOR PES AND LOW VALUES FOR
PFPS HAVE PRACTICALLY NO CRACK FORMATION. BEST RESULTS WERE PRODUCED
WITH EUTECTOIDAL AND TRANSEUTECTOIDAL CAST IRON IN PARTICULAR (C
3.7-3.8, AND SI 2.2-2.3 WT. PERCENT). ONE OF THE CAUSES OF CRACK
FORMATION IS THE FORMATION OF A TOO THIN PRIMARY CRUST ON CRYSTD. METAL
WITH NONUNIFORM FORMATION OF A GAP BETWEEN THE PIPE SURFACE AND THE
MOLD. THE SUPERHEATING OF THE CAST IRON MAY HAVE COUNTERACTING EFFECTS
BOTH FAVORING AND INHIBITING THE CRACK FORMATION.

UDC   621.396.622

USSR

ZLENTSOV, A. V., KHAKHALKIN, V. N., SHEVTSOV, E. A.

"Selection of Optimum Coupling With the Resonator in a Photoparametric Converter"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Institute of Electrical Communications Engineering), 1970, vyp., pp 10-15 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D306)

Translation: The authors consider the circuit of a photoparametric converter based on a photodiode located in a resonator which is one of the loads of a balanced waveguide bridge. The optimum coupling of the waveguide resonator with an arm of the waveguide bridge is calculated. The curve for the change in detector power as a function of the amount of coupling has a maximum close to critical coupling. It is recommended that the coupling coefficients be selected somewhat greater than 1 on the basis of the signal-to-noise ratio. The signal-to-noise level is determined by the converted frequency fluctuations of the klystron oscillator. The maximum signal-to-noise ratio is observed at a rather small imbalance of the bridge. A. K.

1/1

TITLE--CHANGES IN THE ULTRASTRUCTURE OF NEURONS OF THE UPPER CERVICAL
SYMPATHETICAL GANGLION IN CATS WITH THE INTRODUCTION OF THE BLOOD SERUM

AUTHOR-(03)-SOLOVYEVA, ZH.V., KHAKHANOVA, N.L., LIDEMAN, R.R.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 4, PP 584-592

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NEURON, GANGLION, CAT, BLOOD SERUM, SCHIZOPHRENIA,
MITOCHONDRION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1968/1543   STEP NO--UR/0246/70/070/004/0584/0592

CIRC ACCESSION NO--AP0106290

UNCLASSIFIED

CIRC ACCESSION NO--AP0106290
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED THE ACTION
POTENTIALS IN THE SUPERIOR CERVICAL SYMPATHETIC GANGLION, AND ITS
ULTRASTRUCTURE IN CATS IN INTRA ARTERIAL INTRODUCTION OF THE BLOOD SERUM
OF NORMALS, OF PATIENTS WITH SHIFT LIKE SCHIZOPHRENIA AND NUCLEAR
SCHIZOPHRENIA. THE SERUM OF NORMALS SOMEWHAT INCREASED THE AMOUNT OF
LYSOSSOMES IN THE NERVOUS CELLS AND DID NOT CHANGE THE ACTION POTENTIAL
OF THE GANGLION. ELECTRON MICROSCOPICAL CHANGES IN INTRODUCTION OF THE
SERUM OF SCHIFT LIKE SCHIZOPHRENICS WERE EXPRESSED IN AN EVEN MORE
INCREASE IN THE AMOUNT OF LYSOSOMES, A DISTINCT SWELLING OF THE
MITOCHONDRIA AND A DESTRUCTION OF THE CRISTS, IN AN EXPANSION OF THE
ENDOPLASMATICAL NETWORK, A RAREFACTION OF THE NUCLEAR MATRIX AND A
FRAGMENTATION OF THE GOLGI APPARATUS. IN SUCH CONDITIONS THERE WAS A
SIGNIFICANT DECREASE IN THE AMPLITUDE OF THE ACTION POTENTIAL IN THE
GANGLION. THE SERUM OF PART OF THE PATIENTS WITH NUCLEAR FORMS OF
SCHIZOPHRENIA BROUGHT ON A DENSIFICATION OF THE NUCLEAR MATRIX AND
NUCLEOLI, A FRAGMENTATION AND A NARROWING OF THE APERTURE OF CYSTERNS IN
THE ENDOPLASMATICAL NETWORK, A DENSIFICATION IN PART OF THE MITOCHONDRIA
WITH A DESTRUCTION OF THE CRISTS AND A DECREASE IN THE AMOUNT OF
ATTACHED RIBOSOMES. THE AMOUNT OF LYSOSOMES INCREASED SIGNIFICANTLY.
THE NEGATIVE PHASE IN THE ACTION POTENTIAL IN THE GANGLION DECREASES
SIGNIFICANTLY AND WAS NOT COMPLETELY RESTITUTED. THE SERUM OF THE OTHER
PART OF PATIENTS OF THIS GROUP DID NOT INFLUENCE SIGNIFICANTLY THE
ULTRASTRUCTURE ON THE ACTION POTENTIAL OF THE GANGLION.

UNCLASSIFIED

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USSR   UDC 632.95

VERDEREVSKIY, D. D., VOYTOVICH, K. A., KOBZOV, F. N., KHAKHAM, I. B., and
CHERNAYA, N. S.

"Copper Naphthenate Paste -- a Substitute for Bordeaux Mixture in Controlling
Apple Tree Scab"

Tr. Kishinev. S.-kh. in-ta (Works of Kishinev Agricultural Institute),
1971, 6?, pp 32-34 (from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N431

Translation: In comparative tests, quadruple spraying of an apple orchard with
a 0.6% suspension of copper naphthenate paste was only slightly less effective
against scabs on the fruit and leaves than the same application of a 1%
solution of Bordeaux mixture. P. Popov.

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USSR   UDC 632.95

ZACARIYA, V. P., and KHAKHAM, I. B.

"Testing PNM-50 Preparation in Controlling Grape Mildew at the Sovkhoz imeni
Lenin (Village of Parkana) in the Tiraspol'skiy Rayon in 1966"

Tr. Kishinev. s.-kh. in-ta (Works of the Kishinev Agricultural Institute),
1971, 67, pp 26-29 (from RZh-Khimiya, No 1(II), Abstract No 1N432)

Translation: Sections of a grape arbor sprayed four times with 0.6% copper
naphthenate paste (with respect to the active substance) were more effectively
protected from damage by mildew than with the same treatment by 1% Bordeaux
mixture and a 0.7% suspension of copper oxychloride. P. Popov.

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USSR   UDC: 621.397.62:533.67

KHAKHAREV, V. M.

"Chrominance Decoding Module for a SECAM System Color Television Receiver"

USSR Author's Certificate No 265938, filed 10 Jun 68, published 3 Jul 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G218 P)

Translation: A chrominance decoding module is proposed for a SECAM system
color receiver without a delay line for line duration, and with quenching
of the "blue" line during transmission of the "red" signal, quenching of
the "red" line during transmission of the "blue" signal, and alternate
modulation of the "green" beam by red and blue color difference signals.
The module contains a frequency detector to which the subcarrier voltage
is sent, and also video amplifiers and a flip-flop. As a distinguishing
feature of the patent, the module is simplified by connecting the output of
the frequency detector to the input of the "blue" color difference ampli-
fier which has a cathode resistor in common with the "red" color difference
signal video amplifier. Connected in the output circuits of these video
amplifiers are switching elements which are controlled by a signal from the
flip-flop with half-line frequency.
1/1

USSR

UDC: 621.397.132

KHAKHAREV, V. M.

"A Chrominance Decoding Module for SECAM System Color Television Receivers"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, 1970, Author's Certificate No 265938, filed 10 June 1968, p 37

Abstract: This author's certificate introduces a chrominance decoding module for SECAM system color television receivers without a line duration delay line and with quenching of the "blue" line during transmission of the "red" signal, quenching of the "red" line during transmission of the "blue" signal, and alternating line modulation of the "green" beam by the red and blue color-difference signals. The unit contains a frequency detector to which a subcarrier voltage is sent, and also video amplifiers and a flip-flop. As a distinguishing feature of the patent, the decoding module is simplified by connecting the output of the frequency detector to the input of the video amplifier for the "blue" color-difference signal, which has a common resistor with the video amplifier for the "red" color-difference signal. Connected in the output circuits of these video amplifiers are elements which are controlled with the half-line frequency by a signal from the flip-flop.

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USSR

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UDC 621.385.632

BUDNIK, V. V., KHAKHILEVA, G. A.

"Use of Panoramic Voltage Standing-Wave Ratio Meters for Measurement of Matching of Absorbers of Helix Traveling-Wave Tubes"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 1, pp 128-136 (from RZh-Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A 138)

Translation: A method is described for measurement of the matching of absorbers of helix TWT with the aid of panoramic voltage standing-wave ratio meters. Use of the latter considerably shortens the time necessary for evaluation of the quality of matching of the absorber and can assure measurement of the voltage standing-wave ratio of the absorber at a level of 1.03 with a rms error not more than plus or minus 3 percent. 2 ref. Summary.

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USSR

AYLAMAZYAN, A. K., BELOTELOV, V. P., DOLGOPOLOV, V. V., KRAVTSOV, V. G., LOZA,
T. M., MARKINA, N. V., KHAKHIN, M. I.

"A Device for Computing Aerodynamic Parameters"

Abstract: This Author's Certificate introduces a device for computing aero-
dynamic parameters such as altitude, velocity, and Mach number. The unit
contains converters of primary information to binary code which are connected
through a shift register and adder to the input of an arithmetic device. Also
included in the computer are a memory unit, decoder, pulse generator, control
device, and recording unit. As a distinguishing feature of the patent, the
electrical circuit is simplified and the overall dimensions are reduced by
connecting the most significant digital places of one of the registers in the
arithmetic device to the least significant digital places of the address
section of the command register in the control unit through diodes controlled
by the decoder and the pulse generator. The most significant digital places
of the address section and the code section of the command register in the
control device are connected to the memory unit.

1/1

Analysis and Testing

USSR   UDC 669.1.541.015

LASHKO, N. F., SASLAVSKAYA, L. V., KOZLOVA, M. N., MOROZOVA, G. I., SOROKINA, K. P., KHAKHLOVA, N. V., and YAKOVLEVA, YE. F.

"Physical and Chemical Methods of Phase Analysis of Steels and Alloys"

Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov (English version above), Moscow, Metallurgiya Press, 1970, 476 pages

Translation of Annotation: Methods of combined physical and chemical phase analysis are systematized and summarized, including methods of phase separation and their chemical and x-ray structural analysis.

Problems of the theory of electrochemical separation of phases, the principles of selection of electrolytes, and methods of phase analysis are analyzed as applicable to various steels and alloys.

The book is designed for scientific workers of scientific research institutes and plant laboratories involved in the development of steels and alloys, as well as the study of their properties depending on their phase composition. 99 figs, 100 tables, 708 biblio refs.

1/6

USSR

LASJKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages.

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LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages.

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USSR

LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley
i Splavov, Metallurgiya Press, 1970, 476 pages.

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USSR

LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages

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USSR

LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages

6/6

1/2   008   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--EFFECT OF SUBSTITUENTS ON THE DISSOCIATION OF THE HYDROXY GROUPS ON
   THE NAPHTHALENE RING OF BISAZO SUBSTITUTED CHROMOTROPIC ACID -U-
AUTHOR--PETROVA, T.V., KHAKIMKHODZHAYEV, N., SAVVIN, S.B.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 226-30

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DISSOCIATION CONSTANT, HYDROXYL RADICAL, NAPHTHALENE, ORGANIC
   AZO COMPOUND, CONJUGATE BOND SYSTEM, ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1058   STEP NO--UR/0075/70/025/002/0226/0230

CIRC ACCESSION NO--AP0104456
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0104456

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISSOCN. OF THE OH GROUP OF
THE NAPHTHALENE NUCLEUS FOR 27 BIS(PHENYLAZO SUBSTITUTED) CHROMOTROPIC
ACIDS WITH THE SO SUB3 H, CO SUB2 H, OH, OME ANE ME GROUPS IN THE C SUB6
H SUB6 NUCLEI IN DIFFERENT POSITIONS WAS STUDIED. AN INDUCTION EFFECT
OF SUBSTITUENTS TOGETHER WITH A CONJUGATION EFFECT EXISTS FOR REAGENTS
WITH SUBSTITUENTS IN THE M AND P POSITIONS IN THE C SUB6 H SUB6 RINGS.
THUS, SOME OF THE SUBSTITUENTS INCREASE AND SOME DECREASE THE ACID
PROPERTIES OF THE OH GROUPS. SUBSTITUENTS IN THE O POSITION,
IRRESPECTIVE OF THEIR CHARACTER, DECREASE THE ACID PROPERTIES OF THE
REAGENTS, OWING TO STABILIZATION OF THE QUINONE HYDRAZONE FORM OF THE
REAGENT.

AP0019845⁻ CHEMICAL ABST. 2-70   4RO375

28028a Type of color reactions of alkaline earth elements with bisazo-derivatives of chromotropic acid. Savvin, S. P.; Kuzin, E. L.; Petrova, T. V.; Khakimkhodzhaev, N. (Inst. Geochem. Anal. Chem., Moscow, USSR). *Zh. Anal. Khim.* 1969, 24(9), 1325-31 (Russ). Bisazo derivs. of chromotropic acid (I) and alk. earths interact in an acid medium (pH 2.5-4.0) in a 2:1 molar ratio to form complexes with max. absorbance at 710 or at 760 mμ, when the substituting groups are OH or OMe. The stability of the complexes increases in the Mg-Ca-Sr-Ba sequence. Color reactions with the greatest color difference between I and alk. earths were attributed to the participation of the quinone hydrazone form in the complex formation of the reagents, in which the metal interacts with the azohydroxy group. The existence of the 2 close max. in the spectra was attributed to the formation of a sandwich type dimer, in which azo and hydrazo forms of the reagents participate as monomers. When taking into account the stoichiometric ratio M:I = 1:2, the following

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AP3019845

complex structure is suggested. The effect of solvents on the
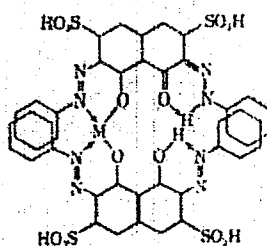
complex formation and stability is conditioned by the vol. of the
solvate molecules and metal ions.   Chaim Weiner

19611717

1/3   .018   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--NEW ORGANIC REAGENTS FOR THE PHOTOMETRIC DETERMINATION OF BARIUM,
   STRONTIUM, CALCIUM, AND SULFATE ION -U-
AUTHOR-(03)-PETROVA, T.V., KHAKIMKHODZHAYEV, N., SAVVIN, S.B.

CCUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 259-65

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOTOMETRIC ANALYSIS, BARIUM, STRONTIUM, CALCIUM, SULFATE,
   COMPLEX COMPOUND/(U)KU2 ION EXCHANGE RESIN

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1539   STEP NO--UR/0062/70/000/002/0259/0265

CIRC ACCESSICN NG--AP0125167
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125167
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,7,BISAZO DERIVS. OF CHROMOTROPIC
ACID WERE SUGGESTED AS ANAL. REAGENTS MAINLY FOR BA AND SR, AS WELL AS
FOR OTHER ALK. EARTHS. CHROMOTROPIC ACID WAS COUPLED IN ALK. SOLN. WITH
DIAZOTIZED AMINES IN THE PRESENCE OF SALTS OF LI AND NA WHICH SERVED AS
CATALYSTS.   THE FOLLOWING CONDITIONS WERE DETD. EXPTL. FOR
SPECTROPHOTOMETRY OF THE INDICATED METAL IONS IN AQ. SOLN. (UNLESS
MENTIONED OTHERWISE) FOR DERIVS. OF I (X SHOWN): I, X EQUALS 4,H, NO
DETAILS; I, X EQUALS P,NO SUB2, CU PH 2,4; TH PH 1.6,2, LA PH 2,4; I X
EQUALS P,SO SUB3 H, LA PH 3,4 IN 80PERCENT ETOH, TH PH 1.5,2, CU PH 2,6;
I, X EQUALS M,SO SUB3 H, LA PH 3.5.5 IN 80PERCENT ETOH, TH PH 1.5,2.5,
CU PH 3,6; I, X EQUALS P,ASO SUB3 H SUB2, TH PH 3.5,4, CU PH 2.5,4, LA
PH 2.8,3.5. THE ABSORPTION SPECTRA OF THE ACIDS AND THEIR METAL
COMPLEXES WERE REPORTED AND CALIBRATION CURVES SHOWN FOR DETN. OF BA,
SR, AND SO SUB4 PRIME2 NEGATIVE. I, X EQUALS P,NO SUB2, WAS BEST FOR
THE PHOTOMETRIC DETN. OF SR, BA, AND SO SUB2 PRIME2 NEGATIVE. COLOR
TESTS FOR AL AND PB WITH I WERE ALSO POSSIBLE. OTHER I TESTED INCLUDED
THOSE WITH X EQUALS M,NO SUB2, P, ME, M,ME, P,MEO, M,CO SUB2 H AND P,CL.
FOR PHOTOMETRIC DETN. OF SMALL AMT. OF SO SUB4 PRIME2 NEGATIVE THE
COMPLEX OF BA WITH I, X EQUALS P, NO SUB2, WAS USED AS AN INDICATOR IN
AQ. ETOH,ME SUB2 CO; THE METHOD WAS USEFUL FOR DETN. OF SO SUB4 PRIME2
NEGATIVE IN TAP WATER; THE SAMPLE WAS PASSED OVER KU2 ION EXCHANGE RESIN
IN H POSITIVE FORM TO REMOVE THE INTERFERING CATIONS, THENANALYZED
COLORIMETRICALLY IN THE PRESENCE OF THE BA,I COMPLEX. DETN. OF 4,5
GAMMA BA AND SR WAS POSSIBLE.

UNCLASSIFIED

3/3   018   UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125167
ABSTRACT/EXTRACT--FACILITY: INST. GEOKHIM. ANAL. KHIM. IM. VERNADSKOGO,
MOSCOW, USSR.

UNCLASSIFIED

KHAKIMOV, A. N., Candidate of Technical Sciences, YEFIMENKO, L. A., Engineer, and PRYGAYEV, A. K., Engineer, Moscow Institute of the National Economy imeni G. V. Plekhanov and GP (abbreviation unknown) imeni I. M. Gubkina; SMIRNOV, B. A., Candidate of Technical Sciences, IVOCHKIN, I. I., Candidate of Technical Sciences, SOSEDOV, A. F., Engineer, and ROSHCHUPKIN, N. P., Engineer, All-Union Scientific Research Institute Montazhspetsstroy

"Regulation of the Structure and Properties of Welded Joints of 10G2FR Heat-Treated Steel in Electroslag Welding"

Abstract: A study was made of the conditions for the regulation of the structure and properties of electroslag-welded joints of 10G2FR heat-treated low-alloy sheet steel, 40 mm thick, with a view to increase the structural--mechanical homogeneity of welded joints. The introduction of a powerlike additive metal into the slag bath favors a reduction of the stay period over the temperature of the critical point Ac_3 of the near-seam metal at heating from 45-50 to 10-12 sec., an increase of the heating rate from 8-10 to 35-40°C/sec, and nearly two-fold increase of the welding rate. The application of

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USSR

KHAKIMOV, A. N., et al., Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 24-26

accompanying cooling makes it possible to decrease the stay period over the Ac_3 temperature of the near-seam metal on cooling from 140-170 to 80-95 sec and to increase the cooling rate from 0.7-1 to 13.5-14° C/sec. At 12.5-14° C/sec cooling rate, the impact ductility of the seam and the near-seam zone of welded joints of 10G2FR heat-treated steel increases up to a level exceeding the norm values within the temperature interval of 20 to -60° C, and a loss of strength is practically prevented. Six figures, three tables, two bibliographic references.

2/2

USSR

MAKHMUDOV, Ya. Kh., KHAKIMOV, Kh. A., and OGLOBLINA, N. M., Uzbek Scientific
Research Institute of Hematology and Blood Transfusion

"Obtaining Large Amounts of Donor Plasma through Plasmapheresis"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, p 53

Translation: The effects of repeated plasmapheresis on the donor's organism were
studied. Over the course of two years, 80 persons aged 20 to 50, who had been
donors for one to 20 years or more, were examined. Because plastic bags and a
special centrifuge were not available, 500-milliliter flasks made of domestic glass
of the NS-2 brand were used; they underwent chemical and physical processing,
sterilization, and centrifugation at 1,500-3,000 rpm without cooling. Microscopic
examination of the blood after centrifugation revealed that no damage was done to
the formed elements. The donors were examined in the usual manner; in addition,
their liver functions were tested and the concentration of plasma proteins and
their fractions was measured. The flasks with blood were equilibrated on a balance
and centrifuged for 20 minutes at 1,500 rpm. The plasma was drawn off, and the
formed elements were reinfused into the donors. On the average 250 ml of plasma
were obtained from 400 ml of blood per donor. Most plasma donors displayed small
fluctuations in their hematological indices, but these were essentially within the

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USSR

MAKHMUDOV, Ya. Kh., et al, Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, p 53

normal range. No post-transfusion complications were observed in either the donors
or the patients. The results indicate that the method of plasmapheresis on a
centrifuge without cooling is harmless, and that it can be recommended for wide
use in the blood transfusion service.

2/2

1/2   010   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--COMPLEXES OF COBALT, II, AND COBALT, III, WITH ISONICOTINIC ACID
   HYDRAZIDE AND SOME OF ITS DERIVATIVES -U-
AUTHOR-(03)-KHAKIMOV, KH.KH., SHABILALOV, A.A., AZIZOV, M.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1022-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, HETEROCYCLIC NITROGEN COMPOUND, ORGANIC
   COMPLEX COMPOUND, CHEMICAL SYNTHESIS, ORGANOCOBALT COMPOUND,
   HETEROCYCLIC OXYGEN COMPOUND, AZIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/2032   STEP NO--UR/0078/70/015/004/1022/1026

CIRC ACCESSION NO--AP0132289
                     UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132289
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORG. SOLVENT SOLNS., COCL SUB2
.6H SUB2 O FORMS ADDUCTS WITH ISONICOTINIC ACID HYDRAZIDE (I), II, III,
OR IV AND IN BASIC SOLNS. IT FORMS COMPLEXES. THE SYNTHESIS OF (SHOWN
ON MICROFICHE) IS GIVEN AND THEIR SCLY. IN WATER, MPS., AND ELEC. COND.
ARE GIVEN. THE INVESTIGATED LIGANDS EASILY REPLACE ALL NO SUB2 GROUPS
IN NA SUB3 (CO(NO SUB2) SUB6). H SUB2 O IN THESE COMPLEXES IS IN THE
OUTER SPHERE. COMPN. OF THE PRODUCTS IS INDEPENDENT OF REACTANT RATIO
WHEN NA SUB3 (CO(NO SUB2) SUB6) IS USED AS A REACTANT.   FACILITY:
TASHKENT. FARM. INST., TASHKENT, USSR.

UNCLASSIFIED

TITLE--USE OF A GAMMA ACTIVATION METHOD FOR THE QUANTITATIVE DETERMINATION
  OF NITROGEN AND PHOSPHORUS IN MODIFIED CELLULOSE PREPARATIONS -U-

AUTHOR-(05)-YUDASHEV, A.YU., MILLER, R.A., KHAKIMOV, M., MURATOVA, U.M.,
  SADYKOV, M.M.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 957-9.

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--QUANTITATIVE ANALYSIS, NITROGEN ISOTOPE, PHOSPHORUS ISOTOPE,
  CELLULOSE, X RAY RADIATION, NEUTRON ACTIVATION ANALYSIS, GAMMA
  RADIATION, RADIOACTIVE DECAY, PHOTONUCLEAR REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1380   STEP NO--UR/0459/70/012/004/0957/0959

CIRC ACCESSION NO--AP0135054
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0135054
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IRRADN. OF MODIFIED CELLULOSE
CONTG. P AND N WITH GAMMA RAYS OF 15,MEV ENERGY CAUSES THE FOLLOWING
PHOTONUCLEAR PROCESSES: PRIME14 N PLUS GAMMA YIELDS PRIME13 N PLUS N
(ABOVE 10.5 MEV THRESHOLD) AND PRIME31 P PLUS N (ABOVE 12.05,MEV
THRESHOLD). PRIME12 C AND PRIME16 O REQUIRE ENERGIES GREATER THAN 15
MEV TO REACT. SINCE THE HALF LIVES OF PRIME13 N AND PRIME30 P ARE 10.08
AND 2.5 MIN, RESP., MEASUREMENT OF THE RADIOACTIVITY DECAY AFTER IRRADN.
GIVES A MEANS FOR RAPID DETN. OF P AND N.   FACILITY: TASHKENT.
GOS. UNIV. IM. LENINA, TASHKENT, USSR.

UNCLASSIFIED

USSR   UDC 591.81:577.391

KHAMIDOV, D. K., KHAKIMOV, P. A., KOLESNIKOVA, S. S., and KAMATALIYEV, U.,
Institute of Biochemistry, UzbekSSR Academy of Sciences

"Study of the Effect of Ionizing Radiation on the Mitotic Activity of Cells
in a Culture"

Abstract: Plant growth and development are stimulated by the action of com-
paratively low doses of ionizing radiation. The crop yield is likewise en-
hanced. Together with the increase in biomass, the cell dimensions are in-
creased. Similar results were obtained in the irradiation of bacteria. The
authors set out to study the effect of comparatively low doses of gamma-
radiation on the mitotic activity of cells under culture conditions. Ascitic
cancer cells (Ehrlich) and human cancer cells (HeLa) were used in the study.
The mitotic activity of the former was determined during 6-7 days of develop-
ment, after preliminary introduction of 0.3 ml (at a concentration of 60-70·
10^6 cell/ml) into each test animal. It was found that irradiation with 25
roentgen produced acceleration of the mitotic activity of both types of cells
studied (43-45% increase in the HeLa cells, 28% increase in the Ehrlich cells).
Acceleration of cell division activity was observed with radiation doses of
1/2

USSR

KHAMIDOV, D. K., et al., Uzbekskiy Biologicheskiy Zhurnal, No 2, 1971, pp 10-12

up to 100 roentgen. With doses of 100-300 roentgen, the number of dividing cells was equal to that of the normal cells. However, the number of cells approaching the prophase increased and the amount of metaphase lamellae remained unchanged. With a dose of 600 roentgen, some inhibition of mitotic cell division was observed. The nuclei were pyknotic. The number of granular lumps of DNA was decreased. With a dose of 3 Kr, no mitoses were observed. The acceleration of cell division under the effect of low gamma-radiation doses is attributed to an increase in content and synthesis of nucleic acids in the cell. The authors propose that low doses of ionizing radiation stimulate the transmission of the G_1 period of cells or the entry of the cells

or the entry of the cells into the cellular cycle out of the G_0 period of mitotic cell division. It is possible, in the opinion of the authors, that with low gamma-radiation doses, small quantities of radiation anabolites are formed, which effect the life activity of the cells.

2/2

USSR

UDC 581.19:616-006:577.391

KHAMIDOV, D. KH., KHAKIMOV, P. A., and MAMATALIYEV, U., Institute
of Biochemistry, Academy of Sciences, Uzbek SSR

"Cytofluorometric Study of Nuclear DNA Proteins in Cell Cultures
Exposed to Ionizing Radiation"

Abstract: Study of the dynamics of radiation injury to Ehrlich
ascites cancer and HeLa cells showed that the intensity of lumine-
scence of the nuclei varied with the radiation dose and time since
exposure. For example, the luminescence of Ehrlich ascites nuclei
increased at a dose of 0.5 kr, reaching a peak at 3 kr, but slowed
with further increase in the dose (6 kr). The intensity of lumine-
scence increased 30 min after exposure, reaching a peak after two
hours, and decreasing after four hours. DNA and the main protein
were found to affect the intensity of secondary luminescence of both
normal and irradiated cells. After DNA was removed from the nuclei
by treating them with DNAse, the intensity of luminescence sharply
decreased
1/1

1/2   028   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--CYTOFLUORIMETRIC INVESTIGATIONS OF NUCLEAR DNA PROTEINS IN CULTURED
 CELLS EXPOSED TO IONIZING RADIATION -U-
AUTHOR-(03)-KHAMIDOV, D.KH., MAMATALIYEV, U., KHAKIMOV, P.A.

COUNTRY OF INFO--USSR

SOURCE--UZB. BIOL. ZH. 1970, 14(2), 7-10

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DNA, RADIATION DAMAGE, FLUORESCENCE, CELL PHYSIOLOGY, NUCLEUS,
 IONIZING RADIATION, COBALT ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0446   STEP NO--UR/9079/70/014/002/0007/0010

CIRC ACCESSION NO--AP0137537
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137537

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE DYNAMICS OF
RADIATION DAMAGE IN EHRLICH ASCITES AND HELA CELLS HAS SHOWN THAT THE
INTENSITY OF FLUORESCENCE OF CELL NUCLEI INCREASES IN PROPORTION TO THE
RADIATION DOSE AND TIME AFTER IRRADN. PRIME60 CO GAMMA IRRADN. WAS
EMPLOYED AT DOSES OF 0.5, 1, 3, AND 6KR, AT A DOSE RATE OF 15 R-SEC.
CELLS SMEARS WERE FIXED AND STAINED WITH ACRIDINE ORANGE, AND THE
INTENSITY OF FLUORESCENCE OF CELL NUCLEI MEASURED ON A CYTOFLUORIMETER.
PARTIAL DNA EXTN. WAS ACHIEVED BY MEANS OF DNASE TREATMENT, AND HISTONES
WERE REMOVED FROM THE NUCLEI WITH TRYPSIN. MAX. INCREASE IN SECONDARY
FLUORESCENCE IN EHRLICH ASCITES CELLS WAS OBSD. AT A DOSE OF 3 KR; THE
MAX. INTENSITY OCCURRED 2 HR AFTER IRRADN. AFTER TREATMENT WITH DNASE,
THE INTENSITY OF FLUORESCENCE DECREASED MARKEDLY (2.3 TIMES, IN
COMPARISON WITH LEVELS OBSD. 2 HR AFTER IRRADN. WITH 3 KR). AFTER
TRYPSINIZATION, THE INTENSITY INCREASED 35PERCENT IN COMPARISON WITH
THAT OF CELLS TREATED ONLY WITH DNASE. COMPARISON WITH NONIRRADIATED
CONTROL CELLS SUGGESTS THAT AFTER EXPOSURE TO IONIZING RADIATION, THE
RATIO BETWEEN DNA AND PROTEINS CHANGES AND METABOLISM IN THE IRRADIATED
CELLS IS SHARPLY DISTURBED.   FACILITY: INST. BIOKHIM., TASHKENT,
USSR.

UNCLASSIFIED

USSR

KHAMIDOV, D. KH., KHAKIMOV, P. A., and MAMATALIYEV, U.

"Luminescent Cytochemical Study of the Adrenal Cortex Proteins Subjected to Ionizing Radiation"

Translation: Concentration of high-molecular proteins in sections of the adrenal cortex of white male rats was studied 1, 6, 18, 24 hr, and 3, 7, 14, and 30 days after γ-radiation (^{60}Co) with doses of 50, 100, 200, 400, 900, and 1200 r. The obtained results showed that the function of the cortex layer of adrenal glands increases soon after the irradiation, even in the case of large doses (900-1200 r). The biosynthesis of hormones by the adrenal glands was inhibited at later dates, and it was accompanied by a quantitative decrease of proteins in the adrenal cortex cells.

1/1

KHAKIMOV R.G.

UR 0482

AA0046430

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, /-70

228396   ROCKER BEARING CLEARANCE SELECTOR consist-
             ing of shaft 1, rocker bearings 2 and 3,
spacer 4, lock-nut 5 and shaped pressure washer 6.
In order to compensate for axial play from running
wear, the selector's pressure screw 8 has a self-
stopping thread and a torsion spring which has
one end passing through a hole in the casing 7 and
the other through a slot in the head of screw 8.
The torque created by spring 9 is turned by the
screw coupling into an axial effort applied through
pressure nut 6 to the outer race of bearing 3 and
via the spacer to bearing 2.
7.7.67. as 1170049/25-27, KHAKIMOV, R.G. (2.6.69)
Bul. 31/8.10.68. Class 47b, Int. Cl. F 06c.

18

19781645

AA0046430
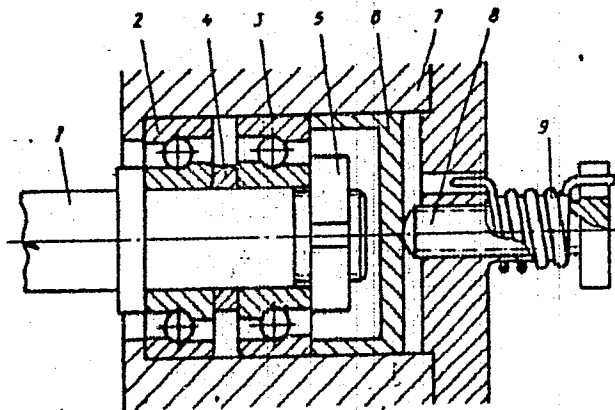
19781646

2/2

1/2   017   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--SEARCH FOR THE DIRAC MONOPOLE AT THE 70 GEV I.P.H.E. PROTON
  SYNCHROTRON -U-
AUTHOR-(05)-GUREVICH, I.I., KHAKIMOV, S.KH., MARTEMIANOV, V.P., MISHAKOVA,
  A.P., OGURTZOV, V.V.
COUNTRY OF INFO--USSR

SOURCE--PHYS. LETTERS (NETHERLANDS) VOL. 31B, NO. 6, P. 394-6 [16 MARCH
  1970)
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PROTON ACCELERATOR, SYNCHROTRON, MAGNETIC POLE, PARTICLE CROSS
  SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0532   STEP NO--NE/0000/70/003/006/0394/0396

CIRC ACCESSION NO--AP0111725
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0111725
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES A SEARCH FOR
THE DIRAC MONOPOLE AT THE 70 GEV I.P.H.E. PROTON SYNCHROTRON. IT WAS
FOUND THAT THE UPPER LIMIT OF THE MONOPOLE PRODUCTION CROSS SECTION WAS
SIGMA (90PRIMEO SUBO) SMALLER THAN OR EQUAL TO 1.5 TIMES 10 PRIME
NEGATIVE 41 CM PRIME2 FOR M SUBQ SMALLER THAN OR EQUAL TO 5 M.
FACILITY: I. V. KURCHATOV INST. ATOMIC ENERGY, MOSCOW, USSR.

UNCLASSIFIED

Graphite

UDC 669.3.035.2

USSR

YELYUTIN, V. P., KOSTIKOV, V. I., DERGUNOVA, V. S., SHURSHAKOV, A. N.,
POSOS'YEVA, G. D., and KHAKIMOVA, D. K.

"Effect of the Degree of Efficiency of a Graphite Grid on the Velocity of its
Treatment with Liquid Zirconium"

Abstract: Studies were continued on the penetration of liquid metals, in this
case, zirconium, into the pores of graphite. Previous work showed that the
penetration of zirconium into the pores reached a maximum and that zirconium
carbide was formed. In the present work, a study was made of the effect of
the ideal structure of the porous graphite on the velocity of penetration
by the liquid zirconium. Cylindrical samples of carbon 20 mm in diameter and
60 mm in length were prepared from PROG-2400 stock. The samples were fired
in an annular kiln at 1250°C for 280 hours, placed in graphite crucibles,
covered with coke, and graphitized in a vacuum of 5×20^{-2} mm at 2000, 2400,
and 2800°C for one hour.
    X-ray diffraction patterns were made to determine the degree of con-
version and then the samples were saturated with liquid zirconium at 1800,
2100, and 2250°C. The contact time varied between 5 to 20 sec; the velocity
1/2

USSR

YELYUTIN, V. P., et al., Tsvetnye Metally, No 4, Apr 71, pp 51-52

in the rise of the melt in the pores was determined. X-ray diffraction
showed that the samples processed at $2000^\circ C$ have a turbostratic carbon struc-
ture. Thermal processing at 2400 and $2800^\circ C$ leads to the appearance and
breakdown of a three-dimensional ordering. The method of Kaur and Mering
was used to determine the extent of graphitization. The increase in the
height of the melt in the pore with time gives a parabolic curve.

The average velocity of penetration is decreased with an increase in
the interplanar constant and is the largest at $2100^\circ C$. As the melt pene-
trates along the surface of the pore, a chemical reaction occurs at the
liquid zirconium-graphite interface, forming zirconium decreases as a result
of the precipitation of zirconium carbide and a diffusion of carbon across
the carbide layer.

The viscosity of the liquid zirconium also increases due to the pre-
sence of zirconium carbide and this in turn slows the penetration. The extent
of graphitization can change the velocity of the firing process even without
temperature changes.

2/2

- 24 -

UDC 631.859.13.546.47

USSR

MUKHAMEDZHANOV, M., KHAKIMOVA, V. K., and VISHNYAKOVA, A. A., Institute of Chemistry, Academy of Sciences Uz. SSR

"Behavior of the Trace Element Zinc During the Production of Ammophos"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 2, 1971, pp 15-16

Abstract: The composition of zinc salts in ammophos bulk was studied by mixing phosphoric acid with zinc sulfate followed by addition of ammonia. It was found that prior to addition of ammonia no reaction took place in the mixture. When ammonia was bubbled in, again no reaction was observed up to pH 2.4. In the range 2.4-3.5 some reaction occurred producing small amounts of $Zn(H_2PO_4)_2$. Only when the pH was increased to above 3.5, solid phase began to appear in the mixture. A product with the formula $ZnNH_4PO_4$ was isolated. Presumably this material was formed in the ammophos due to the microadmixtures of zinc.

1/1

– 38 –

TITLE--DETERMINATION OF MOLYBDENUM AND ZINC IN FERTILIZERS AND PHOSPHATE
RAW MATERIAL -U-

AUTHOR-(03)-NABIYEVA, M.M., KHAKIMOVA, V.K., AULESHEVA, M.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 6-7

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, CHEMISTRY

TOPIC TAGS--FERTILIZER, CHEMICAL ANALYSIS, MOLYBDENUM, POLAROGRAPHIC
ANALYSIS, ZINC, COLORIMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0005   STEP NO--UR/0291/70/014/001/0006/0007

CIRC ACCESSION NO--AP0137204
UNCLASSIFIED

CIRC ACCESSION NO--AP0137204
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTENT OF MO IN FERTILIZERS
WAS DETD. POLAROGRAPHICALLY, AFTER REMOVING THE INTERFERING ELEMENTS FR,
IN, V, ETC., BY TREATING THE SAMPLES WITH MINERAL ACIDS AND IONEX
COLUMNS. ZN WAS DETD. COLORIMETRICALLY.   VARIOUS FERTILIZERS CONTAINED
0.04-1.04 TIMES 10 PRIME NEGATIVE3 PERCENT MO AND 0.5-6.0 TIMES 10 PRIME
NEGATIVE3 PERCENT ZN.   FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

USSR   UDC: 539.294

AZIMOV, S. A., MUMINOV, R. A., NURKUZIYEV, G., KHAKNAZAROVA, Sh., Physico-technical Institute imeni S. V. Starodubtsev, Academy of Sciences of the UzbekSSR

"Reactance Properties of Germanium Diodes With Double Injection"

Abstract: The paper presents the results of research on the reactance properties of diodes with double injection (P^+-N-N^+ structures) made on the basis of relatively pure germanium single crystals of N-type with initial impurity concentration of $5 \cdot 10^{12}$/cc. The injection contacts on these specimens were made by alloying; the area of the PN junction was determined by the cross section of the crystal -- 0.4×0.4 mm^2; the distance between opposite contacts was 0.4 mm. The reactance properties of the diodes were measured on a bridge circuit at a temperature of 77°K. The frequency of the small alternating signal varied from 1 to 45 MHz. The current-voltage characteristic as well as curves showing capacitance as a function of forward biasing current at various frequencies and curves for conductance as a function of current at various frequencies are given.
1/2

USSR

AZIMOV, S. A., et al., IAN UzSSR, Ser. Fiz.-Mat. Nauk, No 3, 1971, pp 40-42

The results show that inductive reactance in germanium diodes with recti-
fying contacts under the given conditions is due to change in the life-
time of the charge carriers. An increase in carrier lifetime causes in-
jection over a considerable length of crystal and formation of an electron-
-hole plasma throughout the base region. The resultant plasma has con-
stant inductance in the 10-30 ma-current region at frequencies from 10 to
30 MHz. Three figures, bibliography of seven titles.

2/2

AP0034374

A70-19361
GENERAL COSMOLOGICAL SOLUTION OF THE GRAVITA-
TIONAL EQUATIONS WITH A SINGULARITY IN TIME.
I. M. Khalatnikov (Akademiia Nauk SSSR, Institut Teoreticheskoi
Fiziki, Moscow, USSR) and E. M. Lifshits (Akademiia Nauk SSSR,
Institut Fizicheskikh Problem, Moscow, USSR).
Physical Review Letters, vol. 24, Jan. 12, 1970, p. 76-79. 12 refs.

    A way is indicated to construct a general solution of the
Einstein equations with a singularity, starting from a previously
known solution of a lesser degree of generality. A qualitative
description is given of the evolution of the metric in this general
solution toward the singularity, which is of a complex, oscillatory
nature.   (Author)

1/2   020   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--OSCILLATORY APPROACH TO SINGULAR POINT IN THE OPEN COSMOLOGICAL
MODEL -U-
AUTHOR-(02)-LIFSHITZ, E.M., KHALATNIKOV, I.M.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 3, P. 200-3 (FEB. 1970)

DATE PUBLISHED----FEB70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--COSMOLOGY, OSCILLATION, MATHEMATIC SPACE, MATHEMATIC MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1781   STEP NO--US/0000/70/011/003/0200/0203

CIRC ACCESSION NO--AP0133686
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0133686
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSES A MODEL WITH HOMOGENEOUS
SPACE OF TYPE VIII WHICH NOT ONLY CONFIRMS THE QUALITATIVE ANALYSIS OF
THE GENERAL COSMOLOGICAL SOLUTION OF EINSTEIN'S EQUATION BUT ALSO
PROVIDES NEW INFORMATION ON CERTAIN ASPECTS OF THE PROBLEM OF A
SINGULARITY HAVING A COMPLICATED OSCILLATORY CHARACTER.
FACILITY: USSR ACAD. SCIS.

UNCLASSIFIED

USSR   UDC 530.145

KHALATNIKOV, I. M.

Teoriya Sverkhtekuchesti (Theory of Superfluidity), Moscow, "Nauka," 1971,
320 pp

Translation of Annotation, p 2: The monograph deals with the present status
of the theory of superfluidity. The first chapters consider questions relat-
ing to the shape of the spectrum for elementary excitations in superfluid
helium. Two-component hydrodynamic equations are then derived, and these are
used to study the propagation of sound and discontinuities in a superfluid.
There is a detailed exposition of the theory of kinetic phenomena in helium II.
The hydrodynamics of a rotating superfluid and the theory of solutions of
foreign particles in helium are also considered. The theory of a Fermi liquid
and the theory of Fermi-Bose systems are closely related to the theory of
superfluidity and are also included in the book. The last chapter sets forth
current ideas about the motion of charged particles in liquid helium. The
author of the book has made a significant contribution to the development of
superfluidity theory.

1/2

USSR

KHALATNIKOV, I. M., Teoriya Sverkhtekuchesti, Moscow, "Nauka," 1971, 320 pp

    The book is intended for scientific workers and engineers and can
also serve as a study aid for postgraduates and students in higher courses
specializing in the field of theoretical physics and solid-state physics.
Fourteen illustrations. Bibliography with 59 titles.

2/2

USSR

BELINSKIY, V. A. and KHALATNIKOV, I. M., Institute of Theoretical Physics imeni
L. D. Landau of the Academy of Sciences USSR

"General Solution of the Gravitational Equations With a Physical Singularity"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 57, No. 6, Dec 69,
pp 2163-2175

Abstract: The authors were able to conclude on the basis of previous studies with
Ye. M. Lifshits that a general solution of the gravitational equations with a phy-
sical singularity exists and to explain the qualitative character of the evolution of
a metric as one approaches the singular point. A general solution of the Einstein
equations is investigated that contains a simultaneous physical singularity with
respect to time. A general solution is understood to mean a solution in which the
physical arbitrariness is determined by four arbitrary functions of three space coor-
dinates in a vacuum and by eight in a space with matter. The general solution con-
sidered exhibits the same type of behavior in time as in the particular case of a
metric with a three-parameter group of motions of the ninth Bianchi type.

1/1

ATO037779

AU 0000

1360 THEORY OF BOSE-FERMI QUANTUM LIQUIDS.
Khalatnikov, I. M. (Inst. for Theoretical Physics, Moscow).
pp 71-86 of Contemporary Physics: Trieste Symposium 1968.
Vol. I. Vienna, International Atomic Energy Agency, 1969.
From International Symposium on Contemporary Physics,
Trieste, Italy. See STI/PUB-214(Vol.1); CONF-680629(Vol.1).

A phenomenological theory of a mixture of Fermi and Bose
liquids is presented here, similarly to Landau's procedure for
Fermi liquids. A definition is given for the Fermi excitation en-
ergy in a superfluid liquid. An exact set of equations has been
obtained which describes the properties of a Fermi-Bose liquid;
the solutions in the acoustic range are discussed. (auth)

19730766

AP0023965   UR 0056

## GENERAL SOLUTION OF THE GRAVITATIONAL EQUATIONS WITH A PHYSICAL SINGULARITY

V. A. Belinsky, I. M. Khalatnikov

An attempt is made to set up a general solution of the Einstein equations with a physical singularity with respect to time. The general solution possesses the same type of behavior in time as in the case of a metric with a three-parameter motion group of the ninth Bianki type.

19650534

SOLUTIONS OF THE GRAVITATIONAL EQUATIONS

V. A. Belinsky, I. M. Khalatnikov

A general solution of the gravitational equations which contained a fictitious singularity was investigated in ref [1]. A solution with a physical singularity was found which was deficient with respect to an arbitrary function which would make it a general solution. In the present paper it is investigated in which way inclusion of the deficient function as a perturbation may, during evolution of the solution with a physical singularity, destroy it and yield a fictitious singularity.

ON THE NATURE OF THE SINGULARITIES IN THE GENERAL

1/2   007   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--GEOLOGICAL FACTORS AFFECTING THE NATURE OF GAS AND OIL DEPOSITS OF
   THE NORTHERN PART OF THE BAKU ARCHIPELAGO -U-
AUTHOR-(02)-POLOUDIN, G.A., KHALAFLI, E.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ. 1970, (2), 3-5

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--PETROLEUM GEOLOGY, PETROLEUM DEPOSIT, NATURAL GAS, PETROLEUM
   PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0140   STEP NO--UR/0487/70/000/002/0003/0005

CIRC ACCESSION NO--AP0129396
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0129396
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME PHYS. AND CHEM. PROPERTIES OF
  CRUDE OIL AND NATURAL GAS ARE GIVEN. THE MAIN GEOL. FACTORS AFFECTING
  GAS OIL DISTRIBUTION IN THE TECTONIC ZONE OF SANGACHALY SEA LAKE BULLA
  ARE THE LITHCL. OF THE ENCLOSING AND OVERLYING ROCKS, BUT MOSTLY THE
  MUDDY VOLCANISM AND ASSOCD. TECTONIC FRACTURES AND FAULTS.

UNCLASSIFIED

USSR

UDC: 629.7.036.3:533.697.4.001.4

SHCHUKIN, V. K., POLIKARPOV, P. A., FILIN, V. A., KHALATOV, A. A., YAKSHIN.
A. P.

"Influence of Entry Conditions on Heat Exchange in Nozzles"

Translation: A description is presented of an experimental installation for
the study of unstable convective heat exchange in nozzles. Results are pre-
sented from an experimental study of the local heat transfer in a nozzle
when a heat insulated pipe with a diameter equal to the input diameter of the
nozzle and a relative length $l/d = 1, 2, 5, 10$ or 15 is connected to its
input, or when a cylindrical sleeve is placed at the output of the nozzle
with various central aperture diameters. 3 figures, 10 biblio. refs.

1/1

1/2   022   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--GRADIENT METHOD FOR INVESTIGATING HEAT TRANSFER IN CHANNELS OF
VARIABLE CROSS SECTION -U-
AUTHOR-(02)-KHALATOV, A.A., SHCHUKIN, V.K.

COUNTRY OF INFO--USSR

SOURCE--AVIATSIONNAIA TEKHNIKA, IZV. VUZ VOL. 13, NO. 4, 1969, 121-126

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HEAT TRANSFER COEFFICIENT, HEAT TRANSFER THEORY

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A METHOD OF
DETERMINING LOCAL HEAT TRANSFER COEFFICIENTS UNDER STATIONARY CONDITIONS
ON THE BASIS OF THE TEMPERATURE DISTRIBUTION MEASURED AT THE CONTOUR OF
THE LONGITUDINAL CROSS SECTION OF THE WALL, WITH SUBSEQUENT
DETERMINATION OF THE TEMPERATURE GRADIENTS FROM A NUMERICAL COMPUTATION
OF THE TEMPERATURE FIELD. THE METHOD IS VERIFIED EXPERIMENTALLY FOR A
CHANNEL CONSISTING OF TWO CYLINDRICAL, A SPHERICAL, AND A CONICAL PARTS.

USSR   UDC 616.281-008.35+615.216.85-071

LAPAYEV, E. V., Candidate of Medical Sciences, UDALOV, YU. F., Doctor of
Medical Sciences, and KHALATOV, O. P.

"The Pharmacological Effect of Pyridoxine and Its Combination With Adenosine
Triphosphoric Acid on the Functional State of the Vestibular Analysor"

Kiev, Zhurnal Ushnykh, Nosovykh, i Gorlovykh Bolezney, No 5, Sep/Oct 71,
pp 15-19

AbstractL An evaluation was made by the cupulometric method of the effect of
pyridoxine and its combination with an equal amount of adenosine triphosphoric
acid on the dynamics of the illusion of counterrotation and of the duration,
frequency, and amplitude of postrotatory nystagmus. Test results demonstrated
that whereas pyridoxine had a positive effect on the functional state of the
vestibular analysor in the case of an initial deficit of this vitamin in
the body, its combination with adenosine triphosphoric acid was effective with
a satisfactory supply of the substance present prior to the test. The pre-
paration may be recommended as an effective means of preventing or reducing
any marked illusory sensations of vestibular origin, an important factor in
modern aviation, by lowering the reactivity of the vestibular analysor to the
effect of stimulants while increasing vestibular stability.
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MEDICINE
Aerospace Medicine

USSR   UDC 613.2;577.164.13/;613.693

UDALOV, YU. F., and KHALATOV, O. P., Moscow

"Pyridoxine Metabolism and Supply in Flight Crew Members"

Moscow, Voprosy Pitaniya, No 3, May/Jun 1971, pp 12-18

Abstract: Nitrogen, amino acid, and vitamin metabolisms are among the most
sensitive metabolic changes produced by stress on the nervous-emotional system
as a result of various physical factors encountered in airplane flights. The
metabolism of pyridoxine was studied in 252 pilots, 83 of whom flew training
missions in IL-14 transport planes (it has been found that personnel in flight
training are under particular nervous-emotional stress, and that daytime flights
at low altitudes are characterized by the effect of atmospheric turbulence on
the crews. During the entire study period, the test subjects were restricted
to a normal diet with a dialy intake of 4,1110 calories, including 1'2 g protein,
154 g fat and 649 g carbohydrates. The daily ration included also: 2 mg
vitamin A, 4.2 mg thiamine, 3.8 mg riboflavine, 33 mg nicotinic acid, 75 mg
ascorbic acid, and 2,4 mg pyridoxine. A group of 40 nonfliers (ground crew
personnel) and 40 sailors (on a cruise) served as controls. The pyridoxine,
4-pyridoxic acid, and oxalate contents in the urine were determined. The
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blood pyridoxine level and the serum aspartateaminotrasferase and alanine-
aminotransferase were determined. Considerable changes in pyridoxine metabolism
were found: there was a significant increase of the vitamin in the blood and
in the urine after 4-6 hr flights. The pyridoxine requirement on flight and
non-flight days changed very little. This fact was attributed to the used of
pyridoxine from the tissue reserves. The authors consider it probable that
pyridoxine is not only used up but redistributed and included in the enzyme
systems of other organs so that the excretion of 4-pyridoxic acid decreased only
slightly during a flight and its daily excretion remained unchanged. The amino-
transferase activity of the blood was increased 10-28%; this is considerably
less of an increase than that of the pyridoxine level in the blood. When pilots
acted as passengers (on IL-18 planes) no increase in the vitamin B_6 concentration
in their blood was found after the flight. This was interpreted as an indication
of the importance of nervous and emotional stress in connection with the changes
in the pyridoxine metabolism of pilots. The authors conclude that the content
of pyridoxine in the daily rations of flight crews must be carefully watched
since a lack of the vitamin might give rise to a decrease in vestibular stability.
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USSR   UDC: 539.4

SHORR, B. F., LOKSHTANOV, Ye. A., KHALATOV, Yu. M., Moscow

"One Possible Approach to Probabilistic Evaluation of the Vibration Strength of Turbine Parts"

Kiev, Problemy Prochnosti, No 11, Nov 72, pp 11-14.

Abstract: A probabilistic estimate is calculated of the vibration strength of turbine machines by means of the strength reserve calculated from the statistical extreme values of applied and rupture variable stresses, based on measurement of mean values and dispersions considering the volume of the experimental data available. The qualitative difference of the application of strength reserves using statistically maximum stresses in place of the maximum measured stresses consists first of all in the utilization not only of the maximally stressed parts, but of all parts for which tensometry is performed, and in the possibility of equally reliably estimating the strength reserves by measurement of stresses on various numbers of parts, as well as estimation of the strength reserve on the basis of the statistically maximum stresses, stimulating an increase in the volume of experimental information on the stress of blades for determination of vibration strength.

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USSR   UDC 547.558.1

SHEVCHUK, M. I., KHALATURNIK, M. V., and DOMBROVSKIY, A. V., Chernovtsi
State University

"Mechanism of the Formation of Phosphonium Salts. α-Alkyl-β, γ-diketo-
phosphonium Slats and Phosphoranes"

Abstract: It has been established that α-bromoketones reacted with triphenyl-
phosphine form initially an enolphosphonium salt and an ionic pair, eventually
converting to the stable quaternary phosphonium salt. The formation of β, γ-
diketophosphonium salt from bromoalkylaryl-α-diketones and triphenylphosphine
goes through only one intermediate stage -- through the ionic pair. With
triphenylphosphine, bromoalkylaryl-α-diketones -- Ar-CO-CO-CH(Br)-R (R=
CH₃, C₂H₅, C₃H₇) -- form α-substituted β, γ-diketophosphonium bromides
which upon treatment with aqueous solution of sodium carbonate convert
easily to the respective β, γ-diketo-α-alkyltriphenylphosphoranes. The
latter reacting via the Wittig reaction yield unsaturated polyoxo compounds.

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USSR   UDC 547.341

SHEVCHUK, M. I., KHALATURNIK, M. V., and DOMBROVSKIY, A. V., Chernovtsi
State University

"IR Spectra and Chemical Structure of Aroylcarbomethylenetriphenylphosphoranes
and Aroylcarbomethyltriphenylphosphonium Bromides"

Abstract: Investigation of the IR spectra of methyl aryl α-diketones,
aroylcarbomethylenetriphenylphosphoranes, aroylcarbomethyltriphenyl-
phosphonium bromides, aroylcarbomethylene- δ-oximetriphenylphosphoranes
and aroylcarbomethyl- δ-oximetriphenylphosphonium bromides showed that the
β-carbonyl groups of the aroylcarbomethylenetriphenylphosphoranes are
conjugated with the P:C double bond. The δ-carbonyl group on the other
hand is not conjugated with P:C and therefore participates in reactions
characteristic of the carbonyl group. The β-carbonyl group of aroylcarbo-
methylene-δ oximetriphenylphosphoranes, in spite of the conjugation with
the P:C bond, forms hydrogen bonds with the hydroxyl group hydrogen of the
δ-oxime function. This ability is retained even upon transition from
δ-oximephosphoranes to their hydrobromides (phosphonium salts).

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